

Vector – new generation material test extensometer



This case study highlights the collaborative partnership with Tinius Olsen and evolution of a new generation material test video extensometer based on our Digital Image Correlation algorithms.

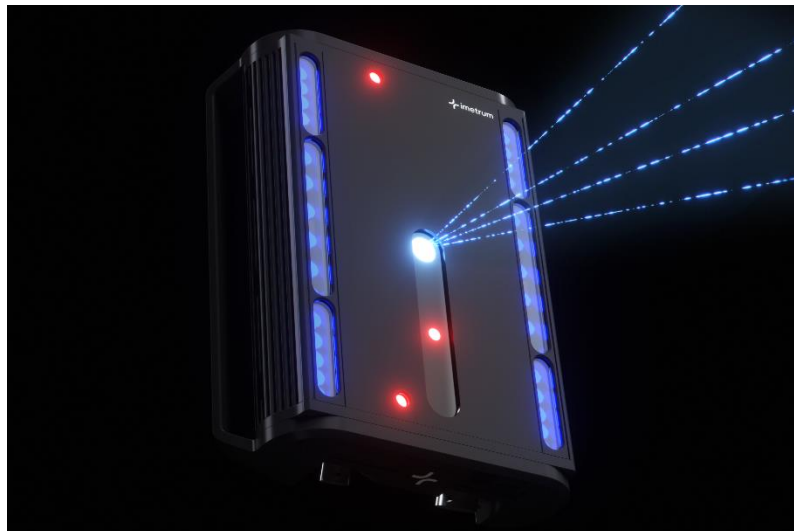
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Challenge

Material testing technology has been a fairly static practice over the generations, with little changing since the first specimen was tested.

In the late 90s Imetrum developed one of the most capable video-based extensometers on the market at the time. It required specialist understanding to operate due to its broadly flexible approach and inherent capability.

Remaining at the forefront of vision-based strain measurement required the constant evolution of our Digital Image Correlation algorithms. Our primary constraint became the processing capability commercially available to handle the raw high speed video data generated.



Solution



Imetrum's innovative design approach identified that newly invented processing technologies could be harnessed in combination with our advanced pattern recognition and tracking algorithms. This enabled us to create Vector, a next generation strain measurement tool capable of advancing the material test process across a wide range of sectors within the entire industry at a commercial price point that rendered historical, low-cost mechanical tools obsolete.

To ensure success of this market specific tool, we understand the necessity of creating a strong collaboration with a sector specialist OEM, with the knowledge and reach required to develop Vector to the point it could revolutionise the market.

Technical and application insight as well commercial sales resource formed the model for a joint venture between Tinius Olsen and Imetrum which will ultimately allow Vector to be offered to a wide range of sector OEMs and end users.



Results

Working with Tinius Olsen ensures we fully understand the client use-case as well as meeting ASTM and ISO material test standards. Jointly we created a product specification which successfully fulfils the end user needs and simplifies the operator experience.

To meet user needs, our highly capable team of in-house engineers have developed a new hardware standard utilising next generation on-board graphical and data processing hardware and an embedded software package based around our tried and tested DIC algorithms. This encompasses features such as onboard lighting control (using phased synchronised LED drivers), sample autodetection, cross-correlation (for out of plane movement correction) and cross-polarising and IR cut filtering amongst others.



Visit the website page: <https://www.imetrum.com/case-studies/new-generation-material-test-extensometer>